



Summary of Community Energy Plan Development Workshop



Submitted to: St. Mary's First Nation



Submitted by: QUEST Canada

Acknowledgments

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About QUEST Canada

QUEST Canada is a national non-government organization that works to accelerate the adoption of efficient and integrated community-scale energy systems in Canada by informing, inspiring, and connecting decision-makers. The organization commissions research, communicates best practices, convenes government, utility, and private-sector leaders, and works directly with local authorities to implement on-the-ground solutions. QUEST recognizes communities that have embraced these principles by referring to them as Smart Energy Communities. Visit us at www.questcanada.org.

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1.0 Executive Summary

1.1 Background

As part of QUEST's Smart Energy Community Accelerator Program, St. Mary's First Nation is developing a Community Energy Plan (CEP). A Community Energy Plan identifies ways to reduce GHG emissions and support the local economy, increase competitiveness, create jobs, improve energy efficiency, and keep energy dollars local. In addition, the community has already undertaken measures to improve energy efficiency - for example, distributing energy efficiency kits, conducting education with youth, planning home efficiency audits and retrofits, retrofit of the school, installation of solar PV, and more.

St. Mary's First Nation and QUEST engaged community stakeholders to help inform development of a Community Energy Plan, while being mindful of 7 generations ahead. This report summarizes workshop results, including measures selected and recommendations for a Community Energy Plan.

Based on the workshop results, the higher priority actions the CEP could include, are:

- A Community Retrofit Project, to undertake energy efficiency improvements for all homes
- Encouraging and supporting energy efficiency and clean energy conversion (e.g. mini-splits)
- Public Education on renewable energy, energy efficiency, active transportation, and more
- Expanding the use of geothermal systems for heat
- Study the potential for rooftop Solar PV and for hydrogen production
- Increasing active transportation amenities (such as bike racks)
- Consider offering a small bus or trolley for transit in the community
- Adding EV chargers
- Improve recycling services and promote use of reusable products
- Protecting natural resources and ecologically significant or sensitive areas, while looking at mixed use development and land use over time.

Participants identified some key community values, that can be considered as part of developing the Community Energy Plan:

- Clean air, water, soil
- Improving energy efficiency, addressing energy poverty
- Generating clean energy
- Improved transportation options
- Economic development
- Improved health indicators
- Food security
- Protect forests and reforestation. Trees protect where the community hunts, fishes, gathers.

Participants also indicated that the community needs:

- to think of lifecycle cost and environmental impacts of each type of technology
- to leave a legacy for future generations - 700 years
- to reduce GHG emissions, and have good stewardship
- to balance western science with traditional knowledge

The actions identified for St. Mary's First Nation CEP are similar to some of the actions in the CEP of adjacent City of Fredericton (albeit different sized communities). This means that some of St. Mary's First Nation CEP actions (e.g. residential and commercial energy efficiency retrofits, clean energy conversions, and promoting EV network) may be achieved more cost-effectively using a collaborative approach. Public outreach or communications activities can also be delivered with more consistency across the region.

The community context also needs to be incorporated into the development of a governance structure, public education and stakeholder engagement strategy, key performance indicator framework, and the prioritization and implementation of actions within the plan. These will be further defined during our CEP Implementation workshop in the Fall, as part of QUEST's SEC Accelerator Program.

1.2 What this Report Covers

St. Mary's First Nation, in partnership with QUEST, hosted an Energy Mapping Exercise and Community Energy Plan Development workshop on May 18 and 19, 2022. The workshop engaged community staff, band members, elected leaders, and broader community members to help identify actions/measures for a Community Energy Plan.

The workshop included an overview of Community Energy Planning and an overview of the results from the needs assessment conducted by QUEST. QUEST facilitated a table-top mapping exercise and an action planning exercise, engaging participants to compare and select measures to be included in a Community Energy Plan. This report contains a summary of the workshop, and preferred measures are described in Sections 2 to 4.

1.3 Who Participated in the Workshop

Representatives of: St. Mary's First Nation and QUEST. Total # of participants was approximately 20. See Annex 4 for a list of workshop participants.

Participants also identified who needs to be engaged as part of the longer process: (but not all at once)

- Elders
- Housing staff
- Community Planning staff
- Infrastructure staff
- Youth - creates momentum
- Business owners - how to make more profit
- Need to keep engaging all band members, through education, food, and community events

It was noted that current capacity is 1 dedicated person - Brett Collins, "the Energy Guy". There is a need to get more projects / programs, to build capacity. In addition, other community staff and community members have roles to play.

2.0 CEP Action Planning Exercise

2.1 Key Recommendations / Outcomes

All CEP Action Strategies are included as a separate [spreadsheet](#). Participants reviewed all the action strategies provided by QUEST, discussed additional actions, and assigned each one: a lead, priority, timeframe, cost, and whether it needs a study, funding, or supporting policy. It should be noted that some actions have no cost, while others might require additional funding, for example from Indigenous Services Canada or the NB Environmental Trust Fund.

2.1.1 Energy Efficiency

Participants expressed support for:

- **Community Retrofit Project.** A Community Retrofit Project aims to improve energy efficiency of residential and commercial buildings in the community, to reduce GHG emissions and lower energy costs/improve affordability. Participants identified Brett Collins (Energy Guy) as a lead, assigned this a **high priority**, to start in 2022-2023. Currently a study is being done. There is a low to medium cost for audits, and medium to high cost for retrofits, which can be offset with incentives through NB Power. It will require additional funding to implement a full project, with a target of 90 homes per year - total of 320 homes.
- **Encourage Clean Energy Conversion.** Through public education and contests, improve awareness of all available programs and incentives and where to go, to encourage clean energy conversion in the community (*e.g. Installation of mini-splits). In addition to incentives provided by NB Power, the community can also study whether to provide additional incentives. Participants identified Brett Collins (Energy Guy) as the lead, and assigned this a **medium to high priority**, to start in 2022.
- **Encourage Energy Efficiency (Residential and Commercial).** Through public education and contests, improve awareness of all available programs and incentives and where to go, to encourage energy efficiency improvements in homes and locally owned businesses. In addition to incentives provided by NB Power, the community can also study whether to provide additional incentives. Participants identified the Brett Collins (Energy Guy) as a lead, assigned this a **medium to high priority**, to start in 2022.
- The community could **conduct a study about mandating energy performance ratings** for all new commercial properties. Buildings larger than 5,000 square feet could be required to have sub-metering, and buildings larger than 10,000 square feet (e.g. commercial, multi-residential) could be required to do benchmarking and disclosure, based on utility data. Participants identified the lead as Martin Paul and Brett Collins, and assigned this a **high priority**, to start in 2023/2024. Implementing a requirement for energy performance ratings for new commercial properties, would require approval of Council.
- The community could **conduct a study about adopting a building code bylaw / require minimum energy efficiency standards**, for different types of buildings (e.g. Energy Star, Net Zero). The community could collect information through the permitting or approval process (e.g.

energy/GHGs saved through high-efficiency or net-zero development). Participants identified the lead as Martin Paul and Housing Director, and assigned this a **medium priority**, to start in 2023. Implementing a building code bylaw or minimum efficiency standards would require approval of Council.

- **Obtain data annually from energy utility / incentive providers**, including total electricity consumption and the # of incentives provided for energy efficiency audits, retrofits and clean energy conversions, in order to measure GHG impact. This was assigned a **medium priority**. Participants identified Brett Collins (Energy Guy) as the lead, to collect data annually.
- **Explore potential for creating a Community Efficiency Financing Program** that would support energy efficiency (e.g. improving building envelope) and clean energy conversion measures. This can be done in partnership with a municipality who can access funding from Federation of Canadian Municipalities, or by obtaining funding through other sources - e.g. Indigenous Services Canada. It would require funding and a study, and could be done in partnership with the City of Fredericton. Participants identified Martin Paul (Senior Manager) to lead this effort, but did not assign a priority.
- **LED Lighting** - Participants identified Brett Collins (Energy Guy) as a lead, who could do a door to door survey, to identify who still uses incandescent or compact fluorescent lightbulbs; and to identify potential partners for an LED lighting campaign (i.e. Incentive program or buy-back program) - e.g. local businesses such as Grocery Retail, Guardian Drug Store, and Two Nations Crossing. This was not assigned a priority.

2.1.2 Distributed Energy Resources

For all measures that involve the development of clean energy resources, it is important to consult traditional knowledge keepers and Elders, encourage going into ceremony, to discern whether or not these energy production sources would be the right/respectful step for the community. It is also important to consult with the whole community.

Participants expressed support for:

- **Educate residents and/or businesses on the potential and benefits of renewable energy**, such as Solar photovoltaic (Solar PV), Wind Power, Micro-Hydro, Biomass, etc. Apply for NB Environmental Trust Fund Funding for educational component / or help finance cost of pilot project. Focus on specific types of renewable energy that are most well suited to the community, and showcase any community projects. Use traditional means of communication (e.g. newsletter, social media, community hall / meetings, etc). Participants identified Brett Collins (Energy Guy) as a lead, and assigned this a **high priority**, to start in 2022-2023.
- **Currently testing a geothermal system at the Greenhouse**. Heat can be used at the school. Similar system could be used for new farm facilities, and in new facilities "on the land program". Brett Collins is the lead, and GeoTech is a collaborator. It would require funding.
- **Work with community partners to explore the installation of solar PV on buildings** such as: schools, community centers, shelters, fire stations, gas stations, grocery stores, etc. Size the infrastructure for the facility use. Combine with storage if possible. Participants identified Penny Polchies (Council Member) and Brett Collins (Energy Guy) to take the lead, and assigned this a **high priority**, to start in 2023. This would require a study, additional funding, and support of

Council. Participants identified potential collaborators such as: NBCC, Workforce NB, since the initiative would need a certified technician. Combine with a diesel generator for back-up power situations, for example the Commercial Centre & Gas Bar, and Senior's Home.

- **Encourage Solar PV Installations in residential/commercial buildings** as a community retrofit project (includes financing solar PV and energy efficiency measures). A study is currently underway. It would require funding and approval of Council for the application for funding. Partners could include: NB Power, Natural Resources Canada, Enercheck Solutions. Participants identified Brett Collins (Energy Guy) as a lead, and assigned this a **high priority**, to start in 2023
- **Establish a Solar Ready Building Policy or Guideline for new buildings** (i.e: requiring new buildings to be ready for net-metered rooftop solar PV, and/or for solar thermal water heating). Participants identified Martin Paul as a lead, to study it. Such a policy or guideline would need approval by Council. This measure was assigned a lower priority.
- **The potential for a Community Solar Farm was already studied. It was determined not to be feasible at the time. But there is interest to study the potential to combine solar PV and hydrogen production, which can be sold to Liberty Utilities and/or used as transportation fuel. A study should** outline potential risks (i.e. effect on the local environment with respect to forests and local water supplies, effect on local the power grid with new inconsistent energy sources), as well as total solar potential calculated through the number of sunlight hours per year, if and how the energy will be stored for later use, if the solar panels will be used for baseload or for peak demand, and cost and Return on Investment (ROI) of a system. The community can then pilot a solar initiative. Determine if the community or sister communities have their own professionals/students in this area that can come aboard to conduct these assessments. Participants identified Brett Collins (Energy Guy) as a lead, and identified Liberty Utilities as a potential collaborator. No priority was assigned.
- **Collect data and report into the community energy planning process.** Participants identified Brett Collins (Energy Guy) as the lead, and data collection is ongoing.

2.1.3 Transportation

Participants expressed support for:

- **Develop Public Awareness Tools** including printed materials, signage, webinars, presentations, social media campaigns, media, editorials, etc. These can be used to promote active transportation, fuel efficient driving, electric vehicles / fuel efficient vehicles, and anti-idling. Participants identified Brett Collins (Energy Guy) as a lead, and assigned this a **high priority**.
- **The community may partner with local organizations to encourage active transportation**, for example: eBike sharing system, bicycle parking, signage to encourage active transportation, as well as incentives for bike purchases/exchange. Community organizations may take steps of their own (e.g. encourage employees, install bike parking). Participants identified Public Works as the lead, and assigned this as a **medium priority**.
- **Consider providing a Small Bus / Trolley - to serve the community.** This measure would need further study, including whether there is enough demand, as well as funding. Participants indicated this would be a high cost and **medium to high priority**, but did not assign a lead.

- **Increase the number of EV charging stations locally** (there is only 1 so far), and pilot installation of residential EV chargers (e.g. as part of residential home charger rental or incentive program). Participants identified Facilities Maintenance Manager, as the lead, and assigned this **low to medium priority**. This measure would require funding, approval by Council, and collaboration with NB Power.
- **Consider offering incentives** that will reward individuals who choose to purchase electric vehicles, or more fuel efficient compact vehicles. This could include rebates for home charger units, toward fuel efficient vehicle replacements, toward other consumer products (e.g LEDs), or could be in the form of discounts for use of recreational facilities, or for local restaurants. This measure would require some form of funding. Participants identified Martin Paul and Brett Collins as the lead, and assigned this a **low priority**.
- **Encourage community members to forgo single occupancy vehicles for active transport.** The community may launch an education campaign so people know the route options and amenities, and rules of the road. Community-wide challenges can also be held, recording kms traveled by foot, bicycle, or transit, by participants. NB Environmental Trust Fund may be used for this purpose. Participants identified Brett Collins (Energy Guy) as a lead. No priority assigned.
- **Consider a policy that states unnecessary idling is unacceptable, for example near the school.** Such a policy would need approval by Council.

2.1.4 Water

Participants expressed support for:

- **Implement measures to promote water conservation** (e.g. public awareness campaign) in partnership with local elementary and highschoools, and/or Conduct retrofit program to conserve water, such as targeting:
 - Low-flow showerheads
 - Faucet aerators or washers
 - Rainwater collection

Participants identified Brett Collins (Energy Guy) as the lead for education, and Public Works (Bill Nash) as the lead for retrofits.

2.1.5 Waste

Participants expressed support for:

- Create or ensure a program exists to collect and recycle residential materials such as glass, plastic, metals and electronic waste as a means to reduce the embedded energy in products that use recycled materials. While recycling is currently managed by the City of Fredericton and Regional Waste Commission, participants indicated there is a need for more blue and grey bins in the community and a need to increase participation. Currently piloting a Sitansisk Recycling program, with own bins and truck. Would need funding and support of Council, to implement a full project. Participants identified Elsie (Recycling Coordinator), as the lead, and assigned this a **high priority**.
- Focus on promoting re-usable products, to reduce non recyclable landfill waste as a means to reduce the total embedded energy in discarded products. Participants identified Elsie (Recycling

Coordinator) as a lead with support of Brett Collins (Energy Guy), and assigned this a **high priority**.

- **Create a Re-Use Centre: to collect and restore good items, to be used post-disasters and for a thrift shop.** Participants identified the Housing Renovation Director and Recycling Coordinator, as the lead, and assigned this a **low priority**. This measure would require further study and funding, and could be done in collaboration with an existing thrift shop.

2.1.6 Land Use

Consult the community on siting new mixed-use developments, where to densify existing built environments, where to improve active transportation networks, where to generate clean energy, and introduce concepts such as net-zero ready buildings. Capture this input in your community plan or land use plan. Julia Kennedy - Community Lands Manager

Participants expressed support for:

- **Consult the community on siting new mixed-use developments**, where to densify existing built environments, where to improve active transportation networks, where to generate clean energy, and introduce concepts such as net-zero ready buildings. Capture this input in your community plan or land use plan. Ensure Community review and Council review and approval of key community / land use decisions. Participants identified Julia Kennedy - Community Lands Manager, as a lead.
- **Adopt policies that ensure building and energy developments preserve ecologically significant or sensitive areas, watersheds, forests, etc.** Participants identified Julia Kennedy - Community Lands Manager, as a lead, and Keeran Estabrooks (Training and Employment Coordinator) and Savanna Percy-Sacobie (Post Secondary Employment Councillor) as collaborators. The community could employ and or contract indigenous young people studying policy or who have backgrounds in policy development. This was assigned a **medium priority**.
- **Develop an educational component** to help the community understand why the community is moving in this direction for future development, and what the benefits exist (e.g. community wellbeing, energy affordability, GHG reduction, etc). Participants identified Julia Kennedy - Community Lands Manager, as a lead.
- To encourage energy efficiency and renewable energy in the community, consider doing the following. Participants identified Julia Kennedy - Community Lands Manager, as a lead, with support of Brett Collins (Energy Guy). Assigned a **lower priority**.
 - Encourage community members to think outside of the box and rethink what their community could and should look like
 - Identify areas of the community and # of buildings that could benefit from energy efficiency retrofits. This can inform a community retrofit project, as described above.
 - Identify and promote energy efficiency standards for new buildings. e.g. Energuide for Houses rating, or net-zero ready.
 - Conduct analysis of energy efficiency / performance of new developments.
 - Update the community plan or land use plan, with community input, to include suitable locations for renewable energy development

- Identify provisions (e.g. size, height, set-backs, other constraints) for Wind, Solar PV, District Energy, etc.
- Create a common space/system where this info is accessible to all administrative departments

2.1.7 Other

Participants expressed support for:

- **Continue to offer monthly prizes** for lowest household energy bills.
- **Organize a Community Energy Challenge once a year** and/or a community feast/celebration to look at the collective impact, especially around Fall/Winter. It can be based on measuring energy efficiency efforts over one month or over a full year. Invite households to take part / register in a Community Energy Challenge. Encourage participation and education through in-home visits.

3.0 Energy Map Exercise

3.1 Map Exercise Results

Goal

Provide participants with a hands-on energy mapping experience to enable them to share knowledge, discuss local opportunities and apply basic techniques for identifying opportunities in a spatial context, including planning local efficiency, clean energy, transportation, and land use actions.

Overview

The Map Exercise engaged multiple community members of St. Mary's First Nation, using a map, to identify opportunities for their Community Energy Plan and initiatives. The exercise enabled participants to denote these opportunities, and discuss various aspects / viewpoints. Below is a summary of the exercise:

Summary of Results

3.1.1 Energy Efficiency

Using green stars and circles, the participants identified potential buildings and neighborhoods for energy efficiency improvements. **These are listed here:**

- All public buildings equipped with Occupancy Sensors
- Bingo Hall. Upgraded machines, Lighting, Restaurant, Consider Biomass system.
- Community/Training Centre.
- School building.
- Kchikhusis Commercial Centre. Upgraded lighting, High Standard freezers, Emergency backup power system.
- Grocery Store. Improved system for heating and cooling.
- Entertainment Centre. Complete Retrofit.

- H. Future Hotel. High Performance and Net-Zero.
- I. Future Seniors Home. High Performance and Net-Zero.
- J. Tiny Home Development.
- K. Paul Street Neighbourhood. Retrofit of the homes.
- L. Depot/Fisheries/Forestry to be developed. Potential Net-Zero office space.

3.1.2 Waste and Renewable Heat

Using red stickers and stars, the participants identified potential waste and renewable heat opportunities. (e.g. capture the waste heat and re-use it in nearby facilities) **These are listed here:**

- A. Entertainment Centre. Utilize kitchen Waste Heat.
- B. School Greenhouse. Integration of a Geothermal System.
- C. Health Centre.
- D. Kchikhusis Commercial Centre.
- E. The Wharf restaurant.
- F. Retail Electrical Room.

3.1.3 Renewable Power

Using Green Stickers and stars, the participants identified opportunities to integrate renewable power. **These are listed here:**

- A. School/CHSMES. Rooftop Solar PV potential.
- B. Ball Diamond.
- C. Community Centre. Rooftop PV Solar potential.
- D. Bingo Hall.
- E. Depot/Public Works.
- F. Potential Farm. Methane Capture, Solar, Wind and Biomass opportunity.
 - a. With a methane line running to and from the farm.
- G. River Hydro.
- H. It was noted that renewable energy can be used in the production of hydrogen, which can be used for transportation or to be sold to natural gas utility.

3.1.4 Land Use

Using various colors of shading, participants identified zones for densification, mixed use, and restricted development. **These are listed here:**

- A. Adding more greenery and greenspaces within the entire community.
- B. Lake/Beaver Dam Area. The potential for closed loop geothermal integrated into a district heating system for future residential development.
- C. Maliseet & Cliff. Opportunity for densification.
- D. Beaver Dam. Restricted Development.
- E. North East of Gabe Acquin Drive. Tiny Home residential development and Healing Centre with Solar PV integration.
- F. North West of Gabe Acquin Drive. Opportunity for the expansion of the current neighbourhood with a winding road with residential units, while protecting forested areas.

3.1.5 Transportation

Using yellow stickers, purple lines, and blue stars, participants identified opportunities for transit amenities, EV charging, trail connectivity / inter-modal hubs, etc. **These are listed here:**

- A. Key Destinations identified, that could benefit from an EV charger, or be on the route of a community bus:
 - a. Two Nations Crossing
 - b. Gabriele Acquin Drive
 - c. Bingo Hall
 - d. Grocery Store
 - e. School
 - f. Community Centre
 - g. Commercial Centre
 - h. The Wharf restaurant
 - i. Entertainment Centre
 - j. Hotel
 - k. Health Centre
 - l. St. Mary's Gas Bar/Grocery Store
 - m. Band Hall.
- B. Potential Farm Captured in Renewable Energy section. Job Creation potential.
- C. Transit Route from Training Centre, up Maliseet Drive and around Bear Lane, up to the Band Hall.
- D. Two Nations Crossing. Ideal Bus Stop.

3.1.6 Smart Energy Networks

Using a red marker and yellow stars, participants identified potential opportunities for district energy / district heat, etc..

- No district energy networks were identified, although there was some interest in whether the community could establish a micro-grid.

3.1.7 Other

Participants were given the opportunity to provide feedback that did not fit into the other sections.

- Future High-performance Greenhouse, for the growth and harvesting of cannabis.

Map Images

Map #1 - example:







Map #2 - example:





Disclaimer: Maps were produced with best available data at the time. Decisions based on map information should be taken into context - and QUEST will not take responsibility for any damages caused by decisions made based on these maps.

3.2 High level summary of Key Findings

Based on the results of the mapping exercise, the community of St. Mary's First Nation has the following opportunities to advance community energy and emissions reduction initiatives.

Table 1: Description of strengths and areas for improvement / opportunities

Areas	Key Areas for Improvement / Opportunities:
Energy Efficiency	Participants indicate the necessity for improving the Energy Efficiency for private and band-owned commercial buildings. Those who participated in the mapping session also indicated many opportunities for retrofits in residential areas with older homes as well as for buildings such as the Entertainment Centre and Depot. Community members also expressed concern over the financial setbacks due to the loss of food & frozen goods during power outages, particularly at the Grocery Store, and the need to both improve efficiency and have back-up power.
Waste and Renewable Heat	There are several opportunities to utilize the waste heat in many of the larger band-owned buildings within the community, particularly those that utilize commercial kitchens such as The Wharf, Commercial Centre and Entertainment Centre. Participants also expressed the desire for a geothermal heating system for the School Greenhouse so as to operate more efficiently year round.
Renewable Power	Community participants identified solely public buildings and sites, such as the school, Bingo Hall, Community Centre and Ball Diamond that could benefit from Renewable Power with not as much emphasis on residential units. During the mapping session, there was quite a lot of discussion around the development of a potential farm which would ideally utilize renewable energy systems such as wind turbines, solar PV and biomass. There was some interest in the possibility of producing hydrogen for use in transportation.
Land Use	There is a focus on utilizing currently undeveloped land for new residential developments to provide housing for community members that utilize renewable energy systems, while protecting the forest. Furthermore, the participants expressed the need for a 'disconnected' and off-grid site north of the community to provide a space for community healing and traditional practices.
Transportation	Those who participated in the mapping session identified several key areas in the community as it is seen on the maps, where it was expressed that a transit system (or community bus) is very much needed as the current walkability within the community is low, particularly for seniors and disabled folks. These key areas could also serve as bus stops along the transit route. The participants also identified the Office Complex on Dedham East as a key area for an EV Charger with an upgrade to the Depot charger.
Energy Networks	As part of new farm development, look at district heat. Explore microgrid.

Other

During the mapping session, the potential for the development of a high performance greenhouse for growing cannabis was also expressed to get into the market and bring in more revenue for St. Mary's which could contribute to the larger energy projects that the participants have identified.

Participants showed strong support for greenery to be included into future development projects, energy efficient residential units and upgrades to current public buildings, some of which have the potential to utilize solar PV systems.

4.0 Summary of Prioritized Actions

For each action selected, participants determined a priority, cost level, lead responsible, partner actions,, and identified whether it needs a study, funding, or supporting policy. Here is a summary of the priority of actions identified above (see spreadsheet for full details):

In summary, the high priority actions are (to start by 2022/2023):

- Continue to consult with community members and traditional knowledge keepers
- Develop a public education strategy, to build awareness of the benefits of energy efficiency, renewable energy, active transportation, anti-idling, recycling, LED lighting, and water conservation. This can include regular newsletter items, at community events, door-to-door, community challenges, and more.
- Encourage energy efficiency for residential and band owned buildings, as well as some commercial centres. Promote Energy efficiency incentives (commercial and residential), from NB Power, for on reserve and off reserve members.
- Encourage clean energy conversion - e.g. mini-splits for residential, geothermal for community buildings, and capturing waste heat for re-use in commercial buildings.
- Undertake a Community Retrofit Program, to improve residential energy efficiency
- Install EV charging stations (e.g. Band Hall, Retail Centre, etc) and consider acquiring a Community Bus for local transportation.
- Explore Solar PV for public buildings (e.g. Community Centres, Grocery Store, Band Hall)
- Increase Recycling and Waste Management, in the community

The medium priority actions are (to start by 2023/2024):

- Adopt policies that ensure building and energy developments preserve ecologically significant or sensitive areas, watersheds, forests
- Study the potential for Solar Farm, Biomass, and Methane Capture, at proposed new farm site.
- Land Use - Densify existing land (in the South) that is currently underdeveloped. Utilize undeveloped land (in the North) for new residential development, while protecting forested land. There is also the need for green space development, such as planting trees and shrubs. And finally, there is interest for an off-grid site north of the community for traditional and healing practices.
- Promote switching to EVs and fuel efficient vehicles (depending on incentives)
- Encourage active transportation and install bike parking

The low priority actions are:

- Consider Solar-ready Building Policy and minimum energy efficiency standards, for new buildings
- Consider a policy that states unnecessary idling is unacceptable, for example near the school. Such a policy would need approval by Council.
- Create a re-use centre (e.g. for recycling of furniture).

Other actions, with no priority assigned:

- Gather and report data about all the activities
- Community Energy Challenge (annual)
- Look at potential for River Hydro, Micro-Grid, and Hydrogen production (to generate revenues)

Participants recommended to **study and/or pilot specific measures first** and **access funding** (e.g. via NB Environmental Trust Fund) for implementing the actions as well as to support community engagement and communications activities.

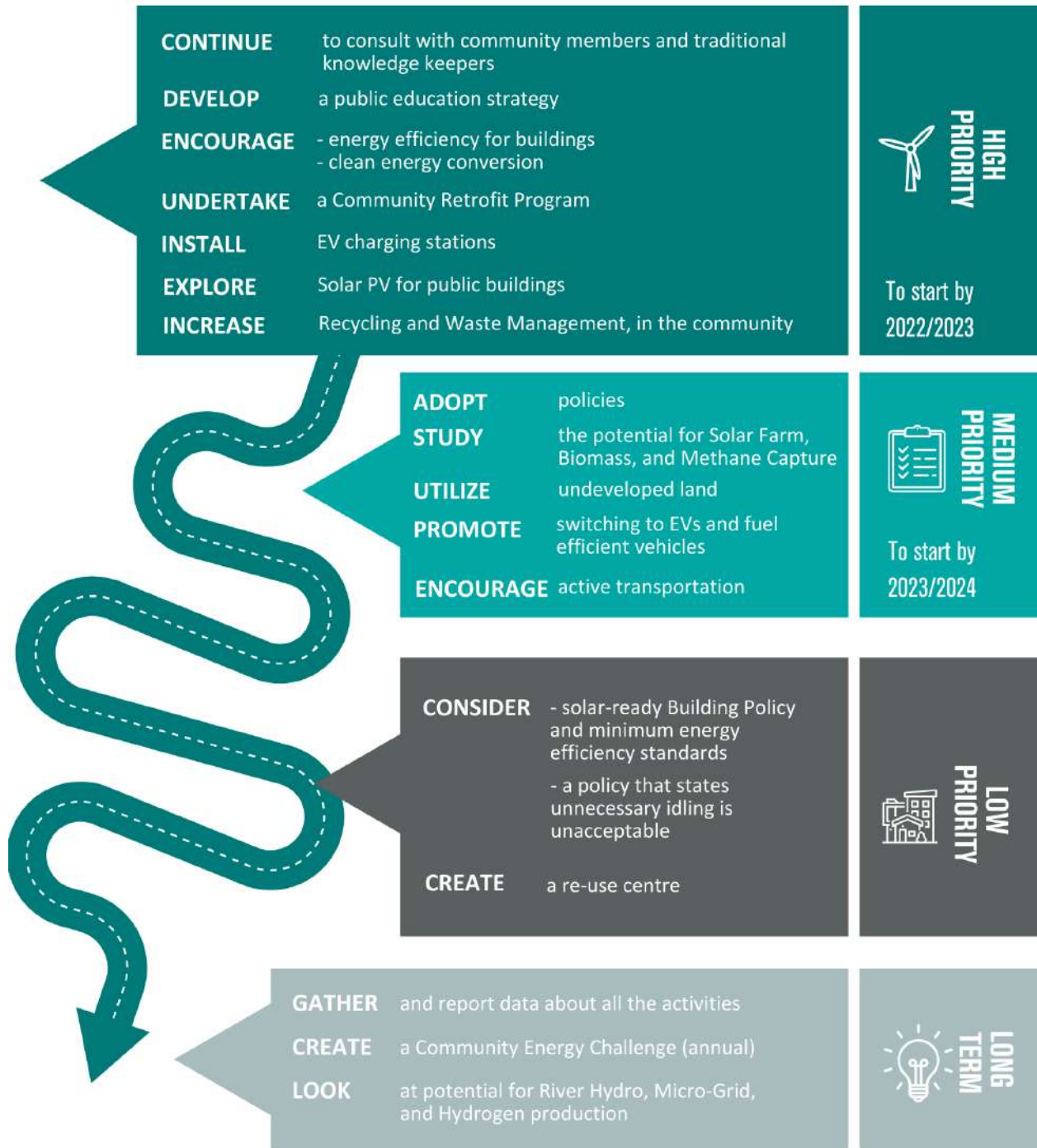
Participants identified the following **policies** that may be needed to support CEP actions, and would need approval of Council:

- Adopt policies that ensure building and energy developments preserve ecologically significant or sensitive areas, watersheds, forests, etc
- Policy or guidance to restrict idling in specific zones in the community, such as near school
- Adopting the National Energy Code for Buildings, minimum energy performance standards, requirements to make new buildings solar-ready, and/or to get Energy Performance Rating upon sale of properties.
- Consider Land Use or Zoning amendments to encourage mixed use development, promote energy efficiency, enable clean energy production (e.g. rooftop solar PV).

Utilities (e.g. NB Power) already offer programs/incentives to both on reserve and off reserve households. It is important to align CEP actions with utility programs or incentives that may become available. Additional funding mechanisms are listed in the Annex 2.

Based on the selection and prioritization of CEP actions, the following graph illustrates a possible roadmap for implementation:

Figure 2: Preliminary Roadmap for Implementation



Participants indicate that the community needs:

- to think of lifecycle cost and environmental impacts of each type of technology
- to leave a legacy for future generations - 700 years
- to reduce GHG emissions, and have good stewardship
- to balance western science with traditional knowledge
- Why: Earth not given by parents, it is inherited by your children
- First Nations play an important role - we are champions
- Oral language is our way

5.0 Potential Next Steps

5.1 Potential Next Steps

- Participate in QUEST's CEP Implementation Workshop, as part of the NB SEC Accelerator Program. This will help your community establish a Governance structure (including internal capacity and committees), a communications and stakeholder engagement strategy, a strategy for data collection and monitoring key-performance indicators, as well as review/refine strategies for your CEP actions.
- Council to review and approve GHG Emissions Inventory and Community Energy Plan
- Examine potential to assign or hire a dedicated community staff, to support St. Mary's First Nation to advance CEP Actions (e.g. public education, anti-idling, energy efficiency, etc).
- Obtain funding (e.g. NB Environmental Trust Fund, etc), for Coordinator position, convening committees, advancing CEP Actions, and communications / public education.
- A budget can be developed based on annual priorities / studies. Include requests into annual budgets and prepare funding proposals for specific projects (e.g. NB Environmental Trust Fund, etc), where needed. Some actions require no capital investments, only small amounts of labor time (e.g. communications support), or outsourcing (e.g. design, marketing, studies, etc).
- Launch studies or pilots, according to the implementation timeline. Analyze outcomes, develop full-scale community-side projects or capital projects, based on financial/technical feasibility, where needed. Each of the Actions in the spreadsheet identifies whether a study or pilot is needed.
- Bring related policy decisions to council, as recommended by staff/committees, or as identified within each Action Strategy. Policy Decisions rest with Council.
- Align with programs offered by organizations such as NB Power, federal and provincial governments, whenever possible. These programs provide incentives for successful implementation of CEP related actions, including: energy efficiency, clean energy conversion, renewable energy, transportation, public education, and other related initiatives.
- Report successes, impacts, and benefits to the community through an annual report card. Conduct further public outreach throughout the year, as needed in alignment with CEP actions.

6.0 Conclusion

QUEST appreciates the opportunity to work with St. Mary's First Nation to help inform development of your Community Energy Plan, as part of the NB Smart Energy Community Accelerator Program.

This report summarizes the proposed recommendations and feedback received during the workshop on May 18 and 19, to inform or serve as a foundation for developing your Community Energy Plan.

We look forward to continue to engage with you as you move toward implementation of your CEP.

7.0 ANNEXES

ANNEX 1 - Embed in Community Plans, Policies, and Processes

Although CEP measures are focused on community-side energy and GHG emissions reduction, St. Mary's First Nation has a critical role to ensure a supportive environment. Successful implementation of the CEP requires embedding measures within other local plans, policies, processes, and decisions. The lead coordinator and internal committee are best positioned to ensure the CEP is embedded into:

- Updates of Plans
- Council Strategic Plans
- Official Plans and Regulations
- Secondary Plans / Plan amendments
- Community Improvement Plans
- Zoning and building code by-laws
- Site Plan control
- Height and density bonusing
- Plan of Subdivision
- Development Permits
- Development Cost Charges
- Parking Charges
- Budget

This can be accomplished through regular meetings of an internal committee or by coordinating inter-departmentally (on a case-by-case basis, or as part of Plan review), through ongoing processes (e.g. through permitting), as well as through council decisions (e.g. new policies/bylaws, budget decisions). Refer to [QUEST's CEP Primer](#) for more details on embedding the CEP into other local plans, policies, processes, etc.

ANNEX 2 - Funding for CEP Actions

It will be important for the community to identify and pursue funding in order to implement specific measures in the CEP. Partners may fund their own efforts, and below are some potential strategies to secure additional funding for CEP measures.

A good practice is to develop an annual budget for prioritized measures, considering the following over the expected life of the CEP:

- Not all actions need to be implemented immediately
- Distinguish which actions will be implemented year over year
- Determine potential partners, resources, and additional sources of funding, for each measure;
- An implementation budget should be developed for every year of the action plan and should be updated on an annual basis
- Funding can be accessed to conduct studies, pilots, projects

Strategies to secure financial resources

Sources	Description
Budget	Create budget item/fund for CEP measures
Internal financing sources	<ul style="list-style-type: none"> ● Local Improvement Charges ● User fees (on water, power and natural gas distribution system, waste.) ● Development Cost Charges (DCCs) ● Green bonds
Local Incentives and Rebates	<ul style="list-style-type: none"> ● Development Cost Charge reductions ● Local Improvement Charge financing (LIC) or Property Assessed Clean Energy (PACE) programs ● Fee rebates/credits (on water and energy bills); local economic incentives for investing in energy efficiency for households and businesses, and new developments (e.g. tax holidays for businesses, faster permitting for developments meeting certain efficiency criteria)
New accounting/ decision-making tools	<ul style="list-style-type: none"> ● Consider natural asset management approach - full cost accounting and valuation of natural assets ● Estimate benefits from green infrastructure ● Combine funding with Gas Tax revenue ● Reinvest efficiency savings into low cost CEP measures, community engagement, etc.
Institutional grants and external sources of funding	<p>Scan and submit funding applications to</p> <ul style="list-style-type: none"> ● Federal agencies and governments <ul style="list-style-type: none"> ○ Indigenous Services Canada ○ Natural Resources Canada ○ Environment and Climate Change (ECC) ○ Infrastructure Canada programs ● Provincial programs and agencies (e.g. NB Environmental Trust Fund)
Leverage private investments	<ul style="list-style-type: none"> ● Engage private sector to partner and financially support actions that improve community-side efficiency, clean energy or transport modes
Economy of scales and synergies at the local level	<ul style="list-style-type: none"> ● Leverage existing initiatives or project by expanding / adapting their scope and collaborating with other groups (thinking beyond silos) ● Take a regional approach - collaborate with neighbouring municipalities ● When a measure involves several communities, cost-share (e.g. procurement)

ANNEX 3 - Methods for measuring the economic impact of CEP

There are significant economic benefits from improving energy efficiency across St. Mary's First Nation, and implementing the full range of measures identified in the CEP. It will be important to quantify the economic impact of CEP measures, to gain support from senior decision-makers and elected officials as well as the community at large.

Different methods of economic analysis serve different purposes and provide different information. All are relevant to assessing the economic, environmental, and social benefits of CEPs, and to increasing knowledge of the full economic impacts of these investments.

A thoughtful balance needs to be struck between informed decision-making and analysis paralysis. The economic analysis to support a CEP should only go as deep as is needed. This analysis can be undertaken by either the lead coordinator, or committee, and could accompany annual updates on CEP progress, making requests for funding or new policies/bylaws, engaging partners to advance key measures, and demonstrating economic, environmental, and social benefits in the community.

Method	Purpose
Community Energy Cost	Discuss total community energy use in a metric everyone understands, in order to generate different conversations with elected officials and stakeholders. (e.g. \$ spent on energy / \$ leaving the community)
Financial Feasibility	Screen and prioritize measures, programs, or portfolios to identify if, and when, the investment will break even
Levelized unit energy cost	Compare the per kWh or per GJ costs of different energy generating technologies across the expected lifetime of the asset.
Marginal abatement cost curve	Compare GHG emission reduction options according to which will cost the least or deliver the most financial savings, and according to their potential impact on GHG reductions
Community socio-economic benefits	Inform the decision-making process, and stakeholders, on the total value to the local community and economy of a CEP, considering how expenditures recirculate through local businesses, households
Cost benefits	Screen and prioritize measures, programs, or portfolios to identify if benefits over time exceed initial costs, and to identify a portfolio of measures that maximize the economic, environmental, and social benefits from CEP implementation.

ANNEX 4 - List of Participants

List of Participants
St. Mary's First Nation CEP Implementation Workshop
May 2022

Name	Organization
Elder Mike Paul	
Christian Gabriel - Electrician, Facilities Maintenance	St. Mary's First Nation
Elsie McNeil - Recycling Coordinator, Building recycling program and education program for youth	St. Mary's First Nation
Martin Paul - Senior Manager and proposal writer, supports Brett Collins	St. Mary's First Nation
Eris Paul - Band's Natural Resource Clerk	St. Mary's First Nation
Randy Polchies - Student / youth representative	Local youth / Band member
Annette Paul, Operations Manager	St. Mary's First Nation
Tim Plant - Protection of Treaty Rights	St. Mary's First Nation
Chief Alan Polchies	St. Mary's First Nation
Brett Collins, Energy Guy	St. Mary's First Nation
Penny Polchies - Council Member	St. Mary's First Nation
Hubert - lives here	Band member
Shane Monague	QUEST
Omar Farag	QUEST
Eddie Oldfield	QUEST

